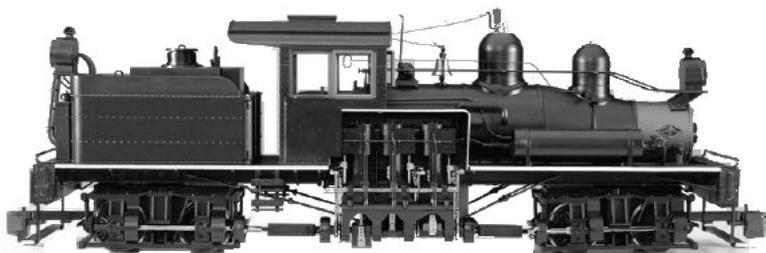




## **Bachmann 38 Ton Shay**



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## Overview

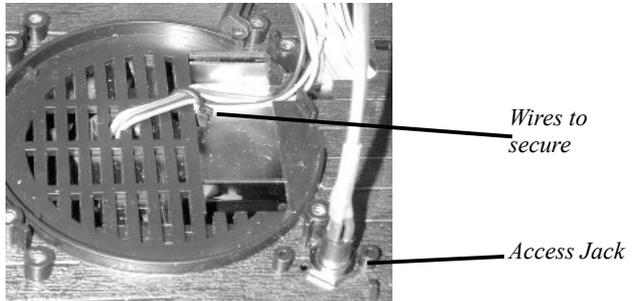
The Bachmann Shay is an easy sound installation, Bachmann has done the difficult work for you. You will find an intimidating nest of wires when you remove the bunker, but it's not nearly as complicated as it looks. We have already seen several ways to do the installation. We suggest what we feel will work for most folks.

## Getting Inside

The bunker is held on by one screw that is under the water hatch near the center toward the rear of the tender. The only wires that go along with this are for the rear light and they are long enough to allow you to set the bunker aside while you continue with the installation.

## Speaker installation

1. Remove 3 screws that secure the shay circuit board platform to the chassis.
2. Secure the wires that come from the truck to the speaker grill using a wire tie or some good glue. The wires will clear the speaker cone if fastened down adequately.



3. Install the speaker under the four hold down screws. Reinstall the Shay circuit board and the platform with the three leg screws.

## Access Jack

There is a slot for a slide switch near the speaker on the engineers side. Enlarge the forward end of this slot to 9/64" and mount the access jack there.

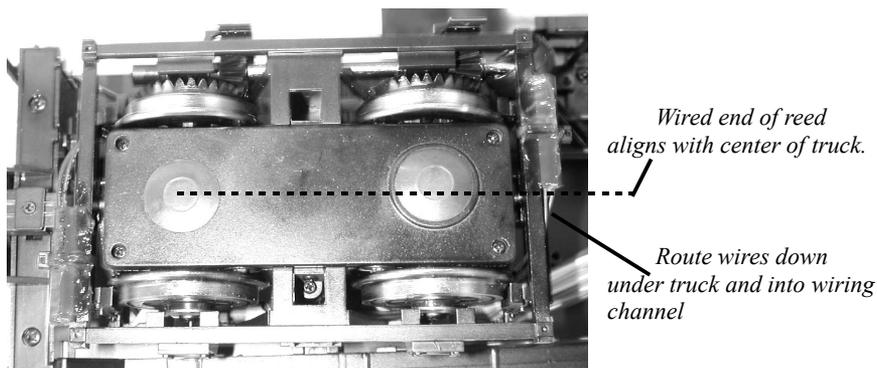
## Volume Switch

The volume switch is mounted to a bracket below one of the water valves on the Bunker. Thread one nut all the way down, put on the lock washer followed by the bracket and finally the other nut. The indexing washer is not needed. You will have to drill out a bit of the inside of the removable water valve to allow it to drop down over the volume switch handle.

## Whistle & Bell Reed Switches (Optional)

Place the shay upside down in the top section of the shipping foam so you can work on the underside of the locomotive.

On the rear truck fasten a reed switch to the leading, and another switch to the trailing, cross bar on the truck. A wire tie and silicone adhesive will work admirably. The wires should extend toward the center of the truck and the end of the reed switch with the wires protruding should align with the center line of the truck. The picture shows the reed switch on the forward cross beam pointing to the engineer's side. This will be the whistle switch. The trailing reed points to the fireman side (left going forward). This will be the bell reed switch.

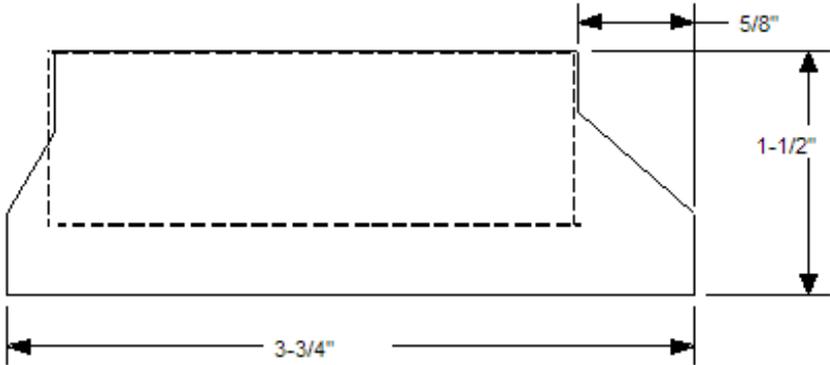


Feed the wires so they will enter into the wiring trough near the bolster. Remove the two small screws holding the lever that goes across on top of the wiring channel. Remove the wiring channel by removing the two screws that secure it. Feed the wires from the reed switches through the floor and reassemble the channel and lever.

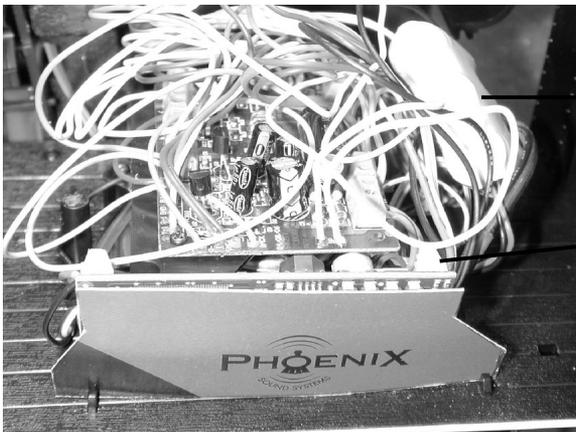
Take the locomotive out of the foam and set it back on it's feet.

## Mounting the Sound Board

### Mounting Template



We feel the best place for the sound board is on the engineer's side of the Bachmann board platform sandwiched between the platform and the bunker wall. It is best if the sound board is raised a little off the floor so it won't come in contact with the speaker. Cut a piece of cardboard or thin plastic in the shape of the template and glue the board to that. This will position the board when you slide the bunker back in place.



Battery (2K2 / PB9)

Sound Board  
(2K2 Shown)

## **Wiring to the sound board**

### **DCC Note (All Systems)**

If you are installing a DCC decoder, the wires going into Bachmann #11 and #12 should be removed from there and hooked to the decoder motor outputs.

### **BigSound™ 2K2**

POSITION SO THAT TERMINALS 1-8 FACE THE LOCOMOTIVE FRONT

#### **Power**

Run a wire from Phoenix #1 to Bachmann # 13 and a second wire from Phoenix #2 to Bachmann #14. Interchange 1 and 2 if toots do not match the direction of the locomotive.

#### **Chuff contacts**

Run a wire from Bachmann # 9 to Phoenix #15 and one from Bachmann #10 to Phoenix #16.

WAIT UNTIL THE NEXT STEP TO SECURE THE WIRE IN TERMINAL 16.

#### **Access Jack**

Route the wires under the Bachmann board platform to the far end of the board. Red in Phoenix #9, yellow in Phoenix #10. The black goes in Phoenix #16 along with the wire from Bachmann #10.

#### **Volume Switch**

Feed the ribbon cable into Phoenix #4,5,6. If you are using reed switches, also insert one wire from each reed switch into Phoenix #5 (ground).

#### **Reed Switches**

Connect the remaining engineer's side reed switch wire (whistle) into Phoenix #14 and the other remaining wire in Phoenix #13 (bell)

#### **Battery**

Plug in the battery.

### **Testing the 2K2**

Put the Shay on a track, set the motor polarity switch to the center position (motor off) and apply power to the track. The sound system should come on when you get to about a quarter throttle. When the battery is charged, the sound system will come on almost immediately.

At this point you may want to let the Shay sit and charge the battery so you can hear the idle sounds. You can turn the volume up or down as you prefer, without affecting battery charging. Charging will start at about 5 track volts, and is optimum at 8 volts.

FULL THROTTLE WILL ACTUALLY TAKE LONGER TO CHARGE THE BATTERY.

If you decide to run the Shay without charging the battery, it will take a few laps before the battery will be able to give you sound when your track voltage falls below 5 volts.

## **BigSound™ P5**

POSITION SO THAT C1 FACES TOWARD THE FRONT OF THE LOCOMOTIVE

### **Power**

Run one of the green wires from the Phoenix C1 connector to Bachmann #13. Connect the other green lead to Bachmann #14.

### **Chuff contacts**

Run the blue wire from Phoenix C2 to Bachmann #9. Run the brown wire to Bachmann #10.

### **Access Jack**

Route the wires under the Bachmann board platform and to the far end of the board. Plug the connector into the Phoenix board.

### **Volume switch**

Plug the cable into the Phoenix board.

## **Testing the P5**

Put the Shay on a track and apply power to the track. The sound system should come on. Use the function buttons on your DCC controller to trigger various functions and ensure DCC is being received.

## **BigSound™ PB9**

POSITION SO THAT TERMINALS 1-6 FACE THE LOCOMOTIVE FRONT

### **Power**

Run a wire from Phoenix #1 to Bachmann # 13 and a second wire from Phoenix #2 to Bachmann #14. Interchange 1 and 2 if toots do not match the direction of the locomotive.

### **Chuff contacts**

Run a wire from Bachmann # 9 to Phoenix #10 and one from Bachmann #10 to Phoenix #11.

### **Access Jack**

Route the wires under the Bachmann board platform and to the far end of the board. Plug the connector into the Phoenix board.

### **Volume Switch**

Feed the ribbon cable into Phoenix #3, 4 & 5.

### **Reed Switches**

Connect one wire from each reed switch to Phoenix terminal #11, this is the common trigger ground. Connect the remaining engineer's side reed switch wire (whistle) into Phoenix #9 and the other remaining wire in Phoenix #8 (bell)

### **Battery**

Plug in the battery.

## **Testing the PB9**

Put the Shay on a track, set the motor polarity switch to the center position (motor off) and apply power to the track. The sound system should come on when you get to about a quarter throttle. When the battery is charged, the sound system will come on almost immediately.

At this point you may want to let the Shay sit and charge the battery so you can hear the idle sounds. You can turn the volume up or down as you prefer, without affecting battery charging. Charging will start at about 5 track volts, and is optimum at 8 volts.

FULL THROTTLE WILL ACTUALLY TAKE LONGER TO CHARGE THE BATTERY.

If you decide to run the Shay without charging the battery, it will take a few laps before the battery will be able to give you sound when your track voltage falls below 5 volts.

## **Final Assembly**

It will all fit - with a little nestling and jiggling. The battery needs to poke up into the coal load or oil cover. It sits on an angle on top of all the wires. If you can't quite picture it, do an assembly first with the coal load or the fuel cover removed so you can see how everything fits. Watch for pinched wires at the screw post - easy to do with so many loose wires in there.